

Tangible User Interfaces Characterization (TUIC)

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ABSTRACT

The objective of this workshop is to give a space to the participants interested in working with TUIs to learn, analyze, discuss and identify features about TUIs. This objective is also linked with the collaborative group TANGINT.FR which will lead to an automated classification of TUIs based on the information collected with the online tool.

Author Keywords

Tangible User Interfaces (TUI); Characterization, cladistic.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

Tangible Interaction is a research field that is closely related to Human-Computer Interaction (HCI), Product Design, Interactive Arts, Mixed Reality, or Internet of Things (IoT). This research field is becoming even more relevant in the HCI community during the last years. This relevance makes Tangible User Interfaces (TUIs) present in several application areas. This presence generated a variety of interfaces design. Each year, researchers design new prototypes again. However, stating the similarities and differences between existing and novel interfaces remains difficult.

This workshop addresses one question “What are the characteristics of a Tangible User Interface?”. Our workshop aims at answering this question in four parts. First, this question asks researchers/developers/students/innovators to think about the challenges tackled by the development of a TUI and about how do they can describe a TUI? Second, it asks the tangible artefacts design a TUI? Third, it asks the relevant constraints in the TUI development related to the

user and the system? Finally, it asks the origins of the TUI related to the breaking elements and inspiration sources?

Our proposal for this workshop is to provide a set of characteristics that the participants will use to describe some TUIs of the literature.

During the workshop, each participant will analyze one or more TUI. Each time the organizers will explain a characteristic, the participants will search for information to answer, using an online web tool (TUIC) that we developed. The intent of the event is to provide a forum to start building an online TUI community, to start feeding a tool that will store descriptions of (all) TUIs (as a big online repository), and to stimulate the analysis, discussion and new ideas on TUI characterization (our set can evolve according to feedbacks).

INNOVATION

This workshop will reach a first step for the Tangible User Interfaces (TUI) Characterization. This first step allows us to collect information about TUIs features. Then, future work will be to use this information to classify TUIs using cladistic methods. Running cladistic algorithms will be the first attempt to classify TUIs as biologists did with living organisms. This attempt will then help to develop new TUI taxonomies thanks to an interactive cladistics online tool.

IMPACT FOR THE HCI COMMUNITY

The characterization of TUIs is important for the HCI community because after this workshop the participants will be capable of:

- Easily locate the main characteristics for the development of a new TUI, according to the objectives of their projects,
- Thoroughly analyze the elements of a TUI for using/adapting in new projects and
- To decompose a TUI in its essential elements.

All these skills developed during the workshop give some benefits to the community as: the researchers can address this question to develop their practical understanding of how to tackle the complexity of developing/using a TUI and researchers can benefit from using a tool to characterize and storage their TUIs. All the community will benefit from the workshop by freely accessing the collected information on the website of the tool.

WORKSHOP SCHEDULING

The workshop will be articulated in the following phases:

- Introduction to the workshop and explanation of the characterization (about 35 minutes)
- Recapitulation of tangible interfaces to be characterized (about 15 minutes)
- First brainstorming and working in the characterization tool (about 1h30 minutes)
- Tangible interface presentations and discussion (about 40 minutes)

REFERENCES

1. Interaction Tangible. <http://www.tangint.org/fr/>.
2. Interaction Tangible, TANGINT/FR ; IHM'16; <http://ihm2016.afihm.org/#!/gt-interaction-tangible>.